

REQUEST FOR RECONSIDERATION

Applicant thanks the Examiner for the consideration given this application and now requests reconsideration in view of the remarks to follow.

Claims 1-37 and 46-60 are pending in the application.

Applicant acknowledges, with gratitude, the allowance of Claims 1-37 and 56-60.

At pages 2-4, the Office Action rejects Claims 46-49 and 51-54 under 35 U.S.C. § 102(e) as being anticipated by Walton et al. (U.S. Patent Application Publication No. 2004/0082356). At pages 4-5, the Office Action rejections Claims 50 and 55 under 35 U.S.C. § 103(a) as being unpatentable over Walton et al. in view of Bjorklund et al. (U.S. Patent No. 7,126,926). Applicant respectfully traverses these rejections for at least the following reasons.

Of the rejected claims, Claims 46 and 51 are the independent claims from which all other rejected claims depend. Both of these claims recite, “processing the M independent modulated signals using a channel matrix and a recovered data signal to extract the data.” In connection with this element of the claims, the Office Action, at page 3, cites Walton et al., Fig. 7 and paragraphs 0214-0217 and states, “the RX spatial processor (770) of each active terminal further estimates the downlink channel state information to determine further data processing and feedback information to the access point (110).” Applicant maintains that this portion of Walton et al. fails to read on the claim element noted here and that, indeed, no portion of Walton et al. reads on it.

To understand this, it may be helpful to reproduce paragraphs 0213-0217 of Walton et al.:

[0213] Each modulator (MOD) 722 receives and processes a respective transmit symbol stream to provide a corresponding stream of OFDM symbols. Each OFDM symbol stream is further processed to provide a corresponding downlink modulated signal. The four downlink modulated signals from modulator 722a through 722d are then transmitted from four antennas 724a through 724d, respectively.

[0214] At each user terminal 120, one or multiple antennas 752 receive the transmitted downlink modulated signals, and each receive antenna provides a received signal to a respective demodulator (DEMOD) 754. Each demodulator 754 performs processing complementary to that performed at modulator 722 and provides received symbols. A receive (RX) spatial processor 760 then performs spatial processing on the received symbols from all demodulators 754 to provide recovered symbols, which are estimates of the modulation symbols sent by the access point.

[0215] An RX data processor 770 receives and demultiplexes the recovered symbols into their respective transport channels. The recovered symbols for each transport channel may be symbol demapped, deinterleaved, decoded, and descrambled to provide decoded data for that transport channel. The decoded data for each transport channel may include recovered packet data, messages, signaling, and so on, which are provided to a data sink 772 for storage and/or a controller 780 for further processing.

[0216] The processing by access point 110 and terminal 120 for the downlink is described in further detail below. The processing for the uplink may be the same or different from the processing for the downlink.

[0217] For the downlink, at each active user terminal 120, RX spatial processor 760 further estimates the downlink to obtain channel state information (CSI). The CSI may include channel response estimates, received SNRs, and so on. RX data processor 770 may also provide the status of each packet/frame received on the downlink. A controller 780 receives the channel state information and the packet/frame status and determines the feedback information to be sent back to the access point. The feedback information is processed by a TX data processor 790 and a TX spatial processor 792 (if present), conditioned by one or more modulators 754, and transmitted via one or more antennas 752 back to the access point.

To explain further, with reference to Figure 7, modulators 722 are located in an access point 110 and are coupled to associated antennas 724. A user terminal 120 may have one or more antennas 752 coupled to one or more demodulators 754. The demodulator output (or outputs) is (or are) sent to RX spatial processor 760 for further (spatial) processing to recovered symbols. The recovered symbols are then sent to an RX data processor 770 for further processing to recover decoded data for the various transport channels. In paragraph 0217, it is discussed that the RX spatial processor 760 “estimates the downlink to obtain channel state

information (CSI).” It is further stated that the RX data processor 770 may also provide packet or frame status. Then, the CSI and the packet or frame status may be sent to a controller 780 to determine feedback information to be sent back to the access point 110. None of this discusses utilizing a recovered data signal (along with a channel matrix) to extract data from the received signals.

Furthermore, one may read further in Walton et al., e.g., at paragraph 0219, where Walton et al. describes how portions of the access point 110 (in particular, scheduler 734) and/or user terminal 120 (in particular, controller 780) use feedback information (“e.g., steering vectors”) received from this exchange of feedback information. Again, no recovered data signal is discussed as being used, in conjunction with a channel matrix, to extract received data from the received signals (rather, the feedback information, which is not a recovered data signal, is used by the opposite side of the channel for control purposes).

Based on this understanding of the cited portions of Walton et al., Applicant cannot understand how Walton et al. discloses the use of a recovered data signal in conjunction with a channel matrix to extract data signals from the received signals. Therefore, Applicant maintains that Walton et al. does not disclose this claim element and that Claims 46-55 are allowable over the cited references. (However, should these rejections be maintained, Applicant respectfully requests a detailed explanation as to how Walton et al. is being read on this claim element.)

Applicant may not have presented all possible arguments or have refuted the characterizations of either the claims or the prior art as found in the Office Action. However, the lack of such arguments or refutations is not intended to act as a waiver of such arguments or as concurrence with such characterizations.

Conclusion

Applicant believes that the above remarks address all of the grounds for rejection and place the application in condition for allowance. Applicant, therefore, respectfully requests prompt and favorable reconsideration of this application.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Dated: January 11, 2008

Respectfully submitted,

Electronic signature: /Jeffrey W. Gluck/
Jeffrey W. Gluck
Registration No.: 44,457
CONNOLLY BOVE LODGE & HUTZ LLP
1875 Eye Street, NW
Suite 1100
Washington, DC 20006
(202) 331-7111
(202) 293-6229 (Fax)
Attorney for Applicant